

WHAT IS CLAIMED IS:

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1. Material for passive electronic components comprising:

a porous ceramic body comprising particles of green silicon carbide or polygranular graphite, and

a metal filling the porosities of said ceramic body and comprising aluminum, an aluminum alloy, magnesium or a magnesium alloy,

said ceramic body forming about 50 to 90% by volume of said material,

said material being formed by an isotropic composite made of two randomly oriented interpenetrating networks of a ceramic phase and a metallic phase, and having a coefficient of thermal expansion below about  $13 \times 10^{-6} \text{ K}^{-1}$  and a density below about  $3100 \text{ kg.m}^{-3}$ .

2. The material of claim 1, having a coefficient of thermal expansion from  $7 \times 10^{-6}$  to  $13 \times 10^{-6} \text{ K}^{-1}$ , thermal conductivity higher than  $150 \text{ W.m}^{-1} \text{ K}^{-1}$  and a Young's modulus higher than 120 GPa, wherein particles of green silicon carbide comprise from 50 to 75% by volume.

3. The material of claim 1, having a coefficient of expansion from  $4 \times 10^{-6}$  to  $10 \times 10^{-6} \cdot K^{-1}$ , density below  $2300 \text{ kg.m}^{-3}$ , thermal conductivity higher than  $100 \text{ W.m}^{-1} \cdot K^{-1}$  and a Young's modulus below 50 GPa, wherein polygranular graphite comprises from 60 to 90% by volume.

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4. The <sup>device</sup>~~material~~ of claim 1, wherein the metal is selected from the group consisting of aluminum alloys A356 and A357.

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